

304 1 1/2 w 49

**Work Order ID 139532****\*139532\***

Page 1

Monday, November 30, 2015 11:45:30 AM

Item ID: D3589-21

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Latch Guide

Start Date: 11/26/2015 Start Qty: 8.00

**\*8\***

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 8.00

**\*8\***

Customer:

Reference:

Approvals:

Process Plan: MLJDate: DEC 02 2015

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool # Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3589

C

100

0.00

**\*100\***

Hardinge

Memo

0.00

Hardinge CNC Lathe Small

1-TURN AS PER FOLIO F\*\*\*\* &amp; DWG D3589

FOLIO REV: AADWG REV: C

2-DEBURR AS REQUIRED

8 φDAS  
**45** 2015-12-07  
9-89

110

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*110\***

QC

Memo

0.00

Quality Control

8 φDAS  
**45** 2015-12-07  
9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                     |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | MRB (QSI042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |

| Root Cause         |                          |                       |                          | FAULT CATEGORY         |                          |                                   |                          |
|--------------------|--------------------------|-----------------------|--------------------------|------------------------|--------------------------|-----------------------------------|--------------------------|
| Environment        | <input type="checkbox"/> | No Re-verification    | <input type="checkbox"/> | Pressure/Forced        | <input type="checkbox"/> | Temperature/Cure                  | <input type="checkbox"/> |
| Design             | <input type="checkbox"/> | Operator              | <input type="checkbox"/> | Bending                | <input type="checkbox"/> | Set-up                            | <input type="checkbox"/> |
| Doc/Data           | <input type="checkbox"/> | Offset/Setup          | <input type="checkbox"/> | Centre Not Concentric  | <input type="checkbox"/> | BOM/Route                         | <input type="checkbox"/> |
| Equip/Tooling      | <input type="checkbox"/> | Supplier              | <input type="checkbox"/> | Cracks                 | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/> |
| Handling/Pre       | <input type="checkbox"/> | Training              | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/> |
| Material           | <input type="checkbox"/> | Use for Testing       | <input type="checkbox"/> | Cuffs                  | <input type="checkbox"/> | Contamination                     | <input type="checkbox"/> |
| Internal Transport | <input type="checkbox"/> | Poor Information      | <input type="checkbox"/> | Crushing               | <input type="checkbox"/> | Countersink                       | <input type="checkbox"/> |
| Tribal Knowledge   | <input type="checkbox"/> | Rushing               | <input type="checkbox"/> | Heat Treat             | <input type="checkbox"/> | Cut Too Short                     | <input type="checkbox"/> |
| LOA                | <input type="checkbox"/> | Product Improvement   | <input type="checkbox"/> | Wave/Twist in Tube     | <input type="checkbox"/> | Instructions Incomplete/Unclear   | <input type="checkbox"/> |
| Substation         | <input type="checkbox"/> | Process Improvement   | <input type="checkbox"/> | Marks/Chatter          | <input type="checkbox"/> | Drill Holes                       | <input type="checkbox"/> |
| Past Expiry Date   | <input type="checkbox"/> | Manufacturing Process | <input type="checkbox"/> | OTHER : _____          |                          |                                   |                          |
| Misidentified      | <input type="checkbox"/> | Past Due              | <input type="checkbox"/> |                        |                          |                                   |                          |

# Work Order ID 139532

Monday, November 30, 2015 11:45:30 AM

**\*139532\***

Page 2

Item ID: D3589-21 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Latch Guide  
Start Date: 11/26/2015 Start Qty: 8.00 **\*8\*** Cust Item ID:  
Required Date: 11/30/2015 Req'd Qty: 8.00 **\*8\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                           | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|----------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 120                            | QC8- Inspect parts - second check                  | 0.00                 |         |        |              | 8             | Ø             |                  | DAS<br>40<br>9-09 |
| <b>*120*</b>                   |                                                    |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo                                               | 0.00                 |         |        |              |               |               |                  |                   |
| Quality Control                |                                                    |                      |         |        |              |               |               |                  | 15/12/07          |
| 130                            | Identify as per dwg & Stock Location: <u>W1002</u> | 0.00                 |         |        |              | 8             | Ø             |                  | DAS<br>6<br>9-09  |
| <b>*130*</b>                   |                                                    |                      |         |        |              |               |               |                  |                   |
| Packaging                      | Memo                                               | 0.00                 |         |        |              |               |               |                  |                   |
| Packaging                      |                                                    |                      |         |        |              |               |               |                  | DEC 08 2015       |
| 140                            | QC21- Final Inspection - Work Order Release        | 0.00                 |         |        |              |               |               |                  |                   |
| <b>*140*</b>                   |                                                    |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo                                               | 0.00                 |         |        |              |               |               |                  |                   |
| Quality Control                |                                                    |                      |         |        |              |               |               |                  | ML5 DEC 08 2015   |

ML5 DEC 08 2015

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |  |                                                                                                                                                     |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  | MRB (QSI042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |                                                                                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                     |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |  | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                     |  |

# Picklist Print

Monday, November 30, 2015 11:45:30 AM

Page 1

Work Order ID: 139532

**\*139532\***

Parent Item: D3589-21

**\*D3589-21\***

Parent Item Name: Latch Guide

Start Date: 11/26/2015

Required Date: 11/30/2015

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP REV:A 12.07.23 NEW ISSUE DD VERF:EC

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M304TR0.500W.049                |                        | Purchased     | No          |                     |                  | 100             | f                  | 256.5421       | 0.12        | 1.010526     |               |                |        |

**\*M304TR0 500W 049\***

304 RD Tube .500 x .049W

**\*\***

Location

Loc Qty

Loc Code

GA002

256.542061

M127937

9.4211

M128833

0.00003

M132872

247.120931

M130099

1.010526  
DAS  
**45** 2015-12-07  
9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

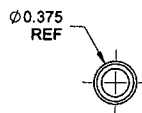
QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

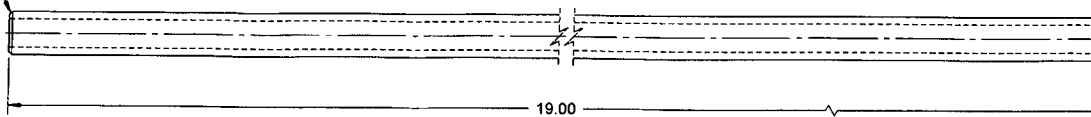
|                                                              |                                     |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|--------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------|-------------------------------------------|----------------------------------------------|-------------------------------------|-------------------------------------------|----------------------------------------|---------------------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--------------------------------------------|------------------------------------------|-------------------------------------------|------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|------------------------------------|------------------------------------------|----------------------------------|------------------------------------------------|---------------------------------|-------------------------------------------------|--------------------------------|-----------------------------------|-------------------------------------|---------------------------------------------|----------------------------------------|-------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------|------------------------------------------------------------|----------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------------------|--------------------------------------|-------------------------------------------|----------------------------------------|--------------------------------|-------------------------------|---------------------------------------------|------------------------------------------|----------------------------------|-------------------------------------|---------------------------------------|------------------------------------------------|-------------------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------|--------------------------------------------|-------------------------------------|----------------------------------|---------------------------------|----------------------------------|-------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                     | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                        | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube <input type="checkbox"/></td> <td style="width: 15%;">Cross tube <input type="checkbox"/></td> <td style="width: 15%;">Water Jet <input type="checkbox"/></td> <td style="width: 15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |                                   |                                             |                                           |                                              |                                     | Skid-tube <input type="checkbox"/>        | Cross tube <input type="checkbox"/>    | Water Jet <input type="checkbox"/>          | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/>    | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/>         | Thermoforming <input type="checkbox"/>    | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>               | Large Fab <input type="checkbox"/>             | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/>        |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Skid-tube <input type="checkbox"/>                           | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/>                                                                                                                                                 | Engineering <input type="checkbox"/>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                         | Quality <input type="checkbox"/>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                       | Other <input type="checkbox"/>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>                                                                                                                                                  |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Date :                                                       |                                     | Step #:                                                                                                                                                                            |                                        | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             | MRB (QSI042) Approval                     |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Description Work Order Deviation                             |                                     |                                                                                                                                                                                    |                                        | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                   |                                             |                                           | Completed By                                 |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|                                                              |                                     |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           | Lead hand / Supervisor Approval Verification |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|                                                              |                                     |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|                                                              |                                     |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     | QC / QA Coordinator Approval              |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Root Cause                                                   |                                     |                                                                                                                                                                                    |                                        | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Environment <input type="checkbox"/>                         | Design <input type="checkbox"/>     | Doc/Data <input type="checkbox"/>                                                                                                                                                  | Equip/Tooling <input type="checkbox"/> | Handling/Pre <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Material <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | LOA <input type="checkbox"/>                 | Substation <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/> | Operator <input type="checkbox"/>    | Offset/Setup <input type="checkbox"/> | Supplier <input type="checkbox"/>  | Training <input type="checkbox"/>          | Use for Testing <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Rushing <input type="checkbox"/>   | Product Improvement <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | Past Due <input type="checkbox"/>  | Pressure/Forced <input type="checkbox"/> | Bending <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | Cracks <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Crushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/> | Set-up <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Contamination <input type="checkbox"/> | Countersink <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Grain <input type="checkbox"/> | Weld <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Off-set <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Drawing <input type="checkbox"/> | Finish <input type="checkbox"/> | Misread <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> |
| OTHER :                                                      |                                     |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                                             |                                           |                                              |                                     |                                           |                                        |                                             |                                      |                                       |                                    |                                            |                                          |                                           |                                    |                                              |                                              |                                                |                                    |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |



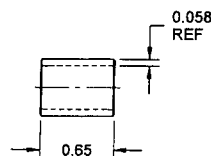
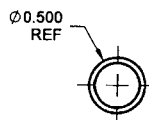
8 7 6 5 4 3 2 1



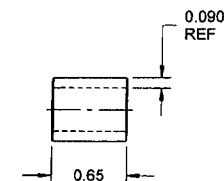
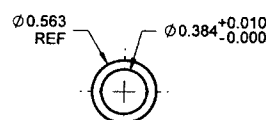
0.03 X 45°  
CHAMFER  
2 PL



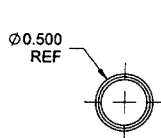
**D3589-1 ARM**



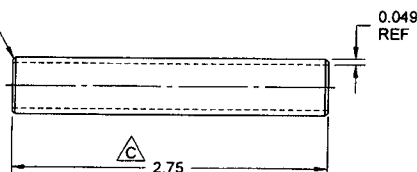
**D3589-3 ARM GUIDE**



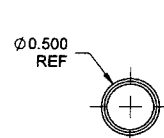
**D3589-23 ARM GUIDE**



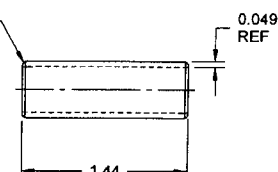
0.03 X 45°  
CHAMFER  
2 PL



**D3589-5 LATCH GUIDE**



0.03 X 45°  
CHAMFER  
2 PL



**D3589-21 LATCH GUIDE**

**D3589-1/-3/-5/-21/-23 NOTES:**

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING  
 D3589-1: 0.375 O.D. X 0.065 WALL (REF. DART SPEC M304TR0.375W.065)  
 D3589-3: 0.500 O.D. X 0.058 WALL (REF. DART SPEC M304TR0.500W.058)  
 D3589-5/-21: 0.500 O.D. X 0.049 WALL (REF. DART SPEC M304TR0.500W.049)  
 D3589-23: AISI 304/316 STAINLESS STEEL ROUND BAR PER ASTM A276 (REF. DART SPEC M304R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: - D3589-1 = 0.34 lbs  
 - D3589-3 = 0.01 lbs  
 - D3589-5 = 0.06 lbs  
 - D3589-21 = 0.03 lbs  
 - D3589-23 = 0.02 lbs

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|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     |          | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                              |              |
| DRAWN      |          | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                            |              |
| CHECKED    |          | DRAWING NO. <b>D3589</b>                                                                                                                                                                                               | REV. C       |
| MFG. APPR. |          | TITLE <b>LATCH ASSEMBLY</b>                                                                                                                                                                                            | SHEET 4 OF 8 |
| APPROVED   |          | SCALE                                                                                                                                                                                                                  | NTS          |
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